

## Mortality of Philadelphia for 1859.

### REPORT

ON

### METEOROLOGY AND EPIDEMICS.

READ BEFORE

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA,

FEBRUARY 1, 1860.

BY

WILSON JEWELL, M. D.

THE accompanying meteorological observations are entirely reliable, and are from the record as taken by Prof. James A. Kirkpatrick, of the Philadelphia High School, for the Smithsonian Institution. I am indebted to his uniform politeness for this abstract.

The mean temperature of the year (1859) was three-quarters of a degree below that of 1858, and almost two-tenths of a degree above the average for the last eight years.

The maximum temperature for the year,  $97^{\circ}$ , was attained on the 13th of July, and the 4th of August. The minimum temperature was two degrees below zero, on the 10th of January.

The warmest day of the year was the 13th of July, when the mean temperature was  $86\frac{1}{2}$  degrees.

The coldest day was the 10th of January, the mean for that day being but two degrees.

The winter and spring were nearly  $3^{\circ}$  above the average temperature for the last eight years, while the summer and autumn were nearly  $2^{\circ}$  below the average.

Of the months, the greatest variation from the average was experienced in March, which was more than  $7^{\circ}$  warmer than usual; indeed, the mean temperature of that month was  $5^{\circ}$  higher than any March in the last eight years. This change in the temperature of March may have been occasioned in part by the more southerly direction of the wind, the prevailing direction being  $9^{\circ}$  further south of west than it usually is, north of that point.

The large amount of rain—4 inches more than the average—may also have had a modifying effect upon the temperature.

The highest point of pressure shown by the barometer, was 30.478 inches, on the 24th of January; and the lowest was 28.890, on the 23d of April.

The amount of rain that fell during the year was  $54\frac{3}{4}$  inches, which is ten inches more than the average for the last eight years. It was more than 13 inches greater than the quantity which fell in 1858. The greatest difference was in the winter and autumn, each of which shows 5 inches of rain more than the average, while the spring and summer show an increase of but little over one inch.

General Abstract of Meteorological Observations, made at Philadelphia, Pa., during the year 1859.  
 By JAMES A. KIRKPATRICK, A. M., Prof. of Civil Engineering in the Philadelphia High School.  
 (Barometer fifty feet above high water.)

1859. THERMOMETER.

BAROMETER REDUCED TO 32° F.

MONTHS.	RANGE.						RANGE.						MONTHLY.	MEAN DAILY.		
	7 A. M.			9 P. M.			7 A. M.			9 P. M.						
	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.				
January . . .	°	°	°	°	°	°	°	°	°	°	°	°	Inches.	Inches.		
January . . .	30.02	38.63	33.35	34.00	55	—2	57	8.0	13.0	30.016	29.975	30.017	30.003	29.357		
February . . .	32.70	40.64	35.99	36.43	63	18	45	6.3	13.2	29.900	29.864	29.891	29.855	30.229		
March . . . .	41.77	55.31	47.27	48.12	70	20	50	6.0	16.9	29.777	29.735	29.762	29.758	30.360		
April . . . .	45.70	56.13	49.01	50.28	78	31	47	6.3	15.5	29.723	29.678	29.703	29.704	30.083		
May . . . .	59.66	72.24	62.06	64.63	87	44	43	5.7	19.7	29.594	29.553	29.576	29.574	30.176		
June . . . .	67.05	76.76	68.74	70.85	96	42	54	6.1	15.9	29.581	29.542	29.659	29.561	30.152		
July . . . .	72.00	82.63	73.31	76.00	97	54	43	4.6	20.2	29.870	29.833	29.853	29.852	30.292		
August . . . .	69.03	82.16	72.39	74.33	97	51	45	3.1	20.5	29.847	29.801	29.832	29.827	29.995		
September . . .	61.02	72.85	64.65	66.18	82	45	36	4.1	18.1	29.875	29.835	29.863	29.855	30.179		
October . . . .	46.98	59.11	50.87	52.32	61	30	51	5.9	16.1	29.864	29.823	29.850	29.845	30.193		
November . . .	42.63	53.35	46.48	47.49	67	27	40	7.3	18.6	29.990	29.940	29.965	29.938	30.338		
December . . .	30.66	36.48	31.87	33.00	71	9	62	8.4	14.2	29.941	29.906	29.930	29.926	30.293		
Annual means .	49.93	60.63	53.00	54.49	97	—2	99	6.0	17.2	29.881	29.840	29.863	29.847	30.475		
Winter . . . .	34.50	40.08	35.60	36.03	63	—2	65	6.9	12.7	29.973	29.931	29.958	29.954	30.475		
Spring . . . .	49.04	61.23	52.75	54.35	87	20	67	6.0	17.4	29.798	29.755	29.750	29.778	30.360		
Summer . . . .	69.36	80.53	71.43	73.79	97	42	55	4.6	19.9	29.866	29.825	29.848	29.847	30.202		
Autumn . . . .	50.21	61.78	54.00	55.33	82	27	55	5.8	18.3	29.910	29.866	29.893	29.889	30.338		
For eight years .	49.73	59.83	53.27	54.31	100	—51	106	5.6	14.7	29.894	29.857	29.877	29.874	30.704		

Meteorological Observations—Continued.

MONTHS.	RELATIVE HUMIDITY.						FORCE OF VAPOUR.						WINDS.						CLOUDS, TENTHS OF SKY COVERED.						DEW-POINT.								
	7 A.M.			2 P.M.			9 P.M.			Min.			7 A.M.			2 P.M.			9 P.M.			Min.			7 A.M.			2 P.M.			9 P.M.		
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.		
January . . .	82	64	77	96	35	.153	.165	.158	.390	.028	.207	.212	.226	.478	.096	.6230	N. 80° 41' W., 375	6.4	6.2	4.4	5.7	25.06	27.05	27.02	26.38	52.1	—9.4						
February . . .	79	65	74	95	31	.152	.166	.158	.404	.070	.227	.227	.222	.549	.085	.5369	N. 42° 53' W., 241	6.4	6.6	5.3	6.1	26.87	28.52	28.02	27.80	53.1	10.6						
March . . .	74	50	66	95	23	.152	.166	.158	.404	.070	.227	.227	.222	.549	.085	.503	S. 67° 23' W., 234	5.9	5.6	4.9	5.5	33.71	35.36	35.96	35.01	61.7	14.8						
April . . .	65	47	63	95	22	.207	.212	.226	.478	.096	.5668	N. 68° 30' W., 224	5.5	7.0	5.6	6.0	33.76	33.74	36.01	34.50	57.8	14.8											
May . . .	69	50	69	97	18	.361	.383	.393	.691	.121	.946	S. 7° 36' W., 90	5.0	5.6	4.1	4.9	49.12	50.26	51.13	50.17	68.3	22.6											
June . . .	72	57	72	95	29	.501	.541	.512	.964	.162	.5229	S. 71° 2' W., 383	5.5	5.8	5.5	5.6	57.31	59.07	58.15	58.17	78.2	29.3											
July . . .	69	51	69	90	32	.551	.574	.579	.890	.268	.3915	N. 84° 6' W., 166	5.8	5.2	3.5	4.8	60.88	61.78	62.42	61.69	75.8	42.1											
August . . .	75	50	72	92	31	.551	.551	.551	.1014	.268	.4447	S. 26° 34' E., 55	4.5	5.8	4.3	4.9	60.86	60.63	62.60	61.36	79.7	42.1											
September . . .	79	59	76	97	29	.438	.462	.472	.658	.181	.7779	N. 70° 38' W., 236	6.2	6.6	6.1	54.37	55.90	56.72	55.66	66.8	32.0												
October . . .	75	50	69	97	23	.259	.274	.280	.569	.065	.3210	N. 75° 21' W., 405	5.8	5.5	4.8	5.4	39.26	39.75	40.85	39.95	62.7	8.9											
November . . .	77	56	71	97	32	.227	.241	.241	.559	.112	.3796	N. 54° 52' W., 206	5.6	5.7	4.1	5.1	35.82	37.36	37.51	36.89	62.2	20.8											
December . . .	76	69	77	96	46	.148	.171	.158	.551	.043	.3460	N. 37° 45' W., 229	7.0	7.5	4.8	6.5	24.09	27.23	25.57	25.64	61.7	—0.1											
Annual means .	74	56	71	97	18	.313	.331	.332	1.014	.028	.54752	N. 79° 31' W., 235	5.8	6.1	4.7	5.5	41.76	43.06	43.50	42.77	79.7	—9.4											
Winter . . .	80	66	76	100	31	.158	.171	.168	.324	.028	.14258	N. 56° 40' W., 268	6.8	6.7	5.3	6.3	26.92	28.72	28.14	28.14	60.3	—9.4											
Spring . . .	69	49	66	97	18	.258	.274	.280	.691	.065	.14117	S. 76° 32' W., 148	5.5	6.1	4.9	5.5	38.86	39.79	41.03	39.89	68.3	14.8											
Summer . . .	72	53	71	95	29	.534	.555	.557	1.014	.162	.13591	S. 73° 8' W., 182	5.3	5.6	4.4	5.1	59.68	60.49	61.06	60.41	79.7	29.3											
Autumn . . .	77	55	72	97	28	.808	.926	.931	.658	.065	.14785	N. 69° 12' W., 281	5.9	5.9	4.8	5.5	43.15	44.34	45.03	44.17	66.8	8.9											
For eight years.	77	58	73	100	13	.328	.348	.350	1.039	.013	.44603	N. 74° 18' W., 214	5.9	6.0	4.4	5.4	43.94				79.7	—16.5											

TABLE I.—*Mortality for the year 1859, Collated from*

DISEASES.	FIRST QUARTER, COMMENCING JANUARY 1, 1859.										SECOND COMMENCING							
	Jan.		Feb.		March.		Adults.		Minors.		Total.		April.		May.		June.	
	M.	F.	M.	F.	M.	F.	..	..	..	..	..	M.	F.	M.	F.	M.	F.	
Abscess	3	1	2	..	4	3	8	5	13	..	3	4	2	..	..	..	..	
“ of liver	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	
Amenorrhœa	..	..	..	..	..	..	2	2	..	..	..	..	1	..	..	..	1	
Anæmia	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	
Aneurism	1	..	1	..	2	..	4	..	..	..	..	1	..	..	..	..	..	
Apoplexy	8	3	3	2	5	3	24	..	..	..	24	2	4	4	4	5	2	
Asphyxia	2	..	1	3	1	1	1	7	..	..	..	2	1	..	..	..	3	
Asthma	1	2	3	..	1	..	5	2	..	..	7	1	1	2	1	..	..	
Cancer and scirrhous	..	..	..	..	..	..	2	..	..	..	..	1	3	..	..	2	4	
“ of the stomach	..	..	3	1	4	3	11	..	..	..	11	2	2	2	3	..	3	
“ “ rectum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
“ “ uterus	..	..	..	..	..	..	4	..	..	..	..	..	2	..	..	..	5	
Casualties	11	1	10	1	3	3	19	10	29	..	..	11	5	6	1	17	4	
Burns and scalds	5	3	..	2	..	..	2	3	9	..	..	1	2	2	1	2	4	
Drowned	..	1	1	..	5	..	..	6	1	..	..	3	..	10	2	15	1	
Exposure	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	
Fracture	1	..	..	..	..	..	1	2	..	..	2	1	..	..	1	1	1	
“ of pelvis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Neglect and want	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	4	2	
Poisoning	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Suicide	..	1	..	..	..	..	1	2	..	..	2	1	..	1	..	1	..	
Violence	..	..	..	..	..	..	..	..	..	..	..	2	..	5	6	31	32	
Cholera infantum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	4	
“ morbus	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Chlorosis	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	
Congestion of the brain	13	4	14	4	8	11	26	28	54	..	6	5	12	4	12	8	..	
“ “ lungs	3	3	3	8	10	11	19	19	38	..	4	5	4	4	4	4	1	
Consumption of the lungs	65	56	68	57	78	75	377	22	399	..	72	70	66	47	68	56	..	
Convulsions	19	19	29	31	37	21	11	145	156	..	18	9	22	22	26	28	..	
Croup	17	17	11	17	16	14	..	92	92	..	12	16	10	11	4	6	..	
Cyanosis	1	..	5	2	..	2	..	10	10	..	..	2	1	2	2	1	..	
Coup de soleil	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Debility	20	22	13	24	27	22	58	70	128	..	17	14	21	23	25	25	..	
Diabetes	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	
Diarrœa	1	1	3	2	6	6	13	6	19	..	4	2	2	3	5	5	..	
Disease of the brain	10	3	9	..	9	2	13	13	33	..	7	5	5	1	16	9	..	
“ “ heart	13	11	12	17	16	10	68	11	79	..	12	4	4	7	7	13	..	
“ “ kidneys	1	2	2	..	..	3	2	5	..	..	2	..	3	..	..	..	..	
“ “ liver	1	..	1	..	2	..	2	..	..	..	1	..	1	..	1	..	2	
“ “ spine	..	3	..	1	..	1	..	3	4	..	2	1	..	1	..	1	2	
Dropsey of the brain	8	9	10	10	10	10	2	55	57	..	16	4	11	10	18	11	..	
“ “ chest	6	6	4	4	6	6	31	1	32	..	2	8	3	10	8	15	..	
“ “ heart	..	1	1	..	..	..	1	1	2	..	2	1	..	1	..	1	..	
Dysentery	..	..	3	4	1	3	1	7	5	12	..	4	..	5	2	15	16	
Dyspepsia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Effusion on the brain	3	3	5	1	5	5	2	20	22	..	3	2	1	5	2	2	2	
Epilepsy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Erysipelas	2	4	4	6	4	..	7	13	20	..	4	3	2	4	6	6	..	
Exhaustion	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	
Fever, bilious	..	..	1	2	1	2	..	6	..	..	6	2	..	3	4	3	..	
“ enteric	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
“ intermit.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
“ puerperal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
“ remittent	2	..	..	..	..	..	..	1	..	..	..	6	..	5	..	1	..	
“ scarlet	4	7	13	15	13	15	..	67	67	..	6	9	5	8	13	12	..	
“ typhoid	12	10	13	10	17	12	45	29	74	..	13	8	15	16	10	6	..	
“ typhus	3	3	3	1	2	2	9	5	14	..	1	1	5	..	3	4	4	
Gangrene	1	1	2	..	3	2	6	3	9	..	..	1	..	1	..	..	..	
Gout	..	1	..	..	1	..	2	..	2	..	..	..	..	..	..	..	..	
“ of the heart	..	1	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	
Hemorrhage	2	3	1	1	..	..	4	3	7	..	1	3	1	..	..	..	1	
“ of the bowels	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	
“ “ lungs	..	..	..	1	1	3	4	7	2	9	..	1	4	2	1	1	1	
“ “ uterus	..	..	..	..	1	1	1	3	..	3	..	1	..	1	..	..	..	
Hernia	..	..	..	..	1	1	1	..	..	..	..	..	..	..	..	..	..	
Hooping-cough	..	..	2	1	3	2	1	..	9	9	..	4	..	1	4	..	2	
Hysteria	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Inanition	2	4	2	3	9	1	3	18	21	..	3	3	3	6	4	2	..	
Inflammation of the brain	19	14	14	11	19	21	16	82	98	..	24	9	11	9	17	18	..	

Returns made to the Health Office. By WILSON JEWELL, M. D.

QUARTER, APRIL 2, 1859.			THIRD QUARTER, COMMENCING JULY 2, 1859.												FOURTH QUARTER, COMMENCING OCTOBER 1, 1859.												Total for the year.											
Adults.	Minors.	Total.	July.			Aug.			Sept.			Adults.			Minors.			Total.			Oct.			Nov.			Dec.			Adults.			Minors.			Total.		
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.									
4	5	9	1	..	2	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	34								
1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1									
1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1									
2	1	3	1	1	2	2	2	..	3	5	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16									
1	..	1	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6									
19	2	21	1	..	5	3	3	4	16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	92									
2	6	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	27									
4	1	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	22									
9	1	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	41									
10	2	12	4	..	2	1	..	..	7	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	37									
..	..	..	1	..	1	..	..	..	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2									
7	..	7	..	5	..	9	..	7	21	..	21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52									
28	16	44	6	2	8	2	7	1	13	13	26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	141										
5	7	12	5	6	1	2	2	..	6	10	16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	56										
20	11	31	11	2	20	..	13	..	25	21	46	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	95										
3	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3									
2	..	12	4	1	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1									
..	..	..	4	1	..	3	1	3	2	8	2	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21									
7	..	2	9	1	1	..	..	3	1	1	5	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23									
..	..	..	4	1	..	3	1	3	2	8	2	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2									
4	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2									
..	79	79	102	92	47	57	14	9	..	321	321	3	4	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	408									
1	5	6	5	8	5	..	..	..	13	5	18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1									
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	24									
23	24	47	13	15	12	12	7	6	20	45	65	7	8	12	4	9	8	17	31	48	214	..	..	..	..	..	..	..	..									
10	12	22	2	4	1	4	1	6	9	18	4	3	2	2	7	12	12	18	30	108	..	..	..	..	..	..	..	..	..									
351	28	379	54	57	70	67	49	46	291	52	343	51	61	74	82	65	51	335	49	384	1505	..	..	..	..	..	..	..	..	..								
4	121	125	23	24	30	25	17	11	9	121	139	21	8	24	25	18	13	8	101	109	520	..	..	..	..	..	..	..	..	..								
1	58	59	7	9	5	11	7	5	..	44	44	15	13	23	30	22	14	..	117	117	312	..	..	..	..	..	..	..	..	..								
..	8	8	3	2	5	3	1	1	..	15	15	2	1	3	2	3	..	11	11	44	..	..	..	..	..	..	..	..	5									
1	..	1	3	..	..	..	..	..	4	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1									
55	60	115	32	21	29	25	16	13	58	78	136	18	24	14	13	14	20	58	45	103	482	..	..	..	..	..	..	..	..	..								
..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3									
7	14	21	18	28	11	8	5	5	64	11	75	..	1	1	1	3	..	1	3	9	2	1126	..	..	..	..	..	..	..	..	..							
14	29	43	9	6	7	4	8	3	25	12	37	8	2	10	5	3	..	21	7	28	141	..	..	..	..	..	..	..	..	..								
29	18	47	6	7	9	6	6	5	26	12	38	8	8	11	5	8	..	8	34	14	48	212	..	..	..	..	..	..	..	..	..							
..	..	..	..	..	..	..	2	1	1	4	1	5	2	1	2	2	3	1	9	2	11	21	..	..	..	..	..	..	..	..	12							
6	4	10	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18									
3	4	7	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33									
..	70	70	17	18	17	8	6	6	..	72	72	5	5	5	5	7	8	5	2	33	35	234	..	..	..	..	..	..	..	..	..							
43	3	46	5	6	10	10	5	6	39	3	42	4	8	8	8	7	4	35	4	39	159	..	..	..	..	..	..	..	..	..								
2	2	4	..	..	..	2	1	1	..	2	2	4	1	1	1	1	3	7	1	1	8	18	..	..	..	..	..	..	..	..	129							
18	24	42	11	13	20	12	5	18	45	63	4	1	1	1	1	1	2	3	3	3	3	..	..	..	..	..	..	..	..	1								
..	4	11	15	5	7	8	6	1	1	3	25	28	1	2	2	2	3	1	1	3	1	5	..	..	..	..	..	..	..	..	76							
6	19	25	2	..	..	1	1	2	..	4	2	6	2	2	2	7	1	..	..	..	..	..	..	..	..	..	..	..	1									
1	..	1	2	2	2	1	..	..	4	1	5	..	1	1	1	1	3	..	..	..	..	..	..	..	..	..	..	24										
3	3	9	12	2	2	1	..	..	1	..	1	1	1	1	1	1	3	1	..	..	..	..	..	..	..	..	..	5										
..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5									
12	..	12	..	..	..	5	..	..	3	13	..	13	..	3	..	..	4	..	..	3	..	..	..	..	..	..	..	..	51									
..	1	1	1	1	2	6	..	..	3	1	9	4	13	..	..	..	4	..	..	3	..	..	..	..	..	..	..	..	23									
..	..	53	53	3	5	7	8	2	3	..	28	28	5	11	12	17	17	22	..	..	84	84	232	..	..	..	..	..	..	..	..	264						
52	16	68	7	12	14	12	7	15	48	19	67	16	7	10	12	1	1	1	1	1	1	1	1	1	1	1	1	1	47									
10	4	14	..	..	..	3	2	4	2	1	9	3	12	1	1	1	1	2	1	1	2	1	1	1	1	1	1	1	21									
1	1	2	1	1	2	..	1	..	3	2	5	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3									
..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1									
4	2	6	5	3	2	2	5	13	6	19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	41										
..	7	2																																				

TABLE I.—*Mortality*

DISEASES.	FIRST QUARTER, COMMENCING JANUARY 1, 1859.										SECOND QUARTER COMMENCING									
	Jan.		Feb.		March.		Adults.		Minors.		April.		May.		June.					
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Inflammation of the bronchi . . . . .	4	9	7	6	10	6	20	22	42		7	5	6	4	3	1				
" " kidneys . . . . .	1	1	1	2	4	1	3	6	9		..	2	1	4	1	2				
" " larynx . . . . .	..	1	1	2	4	7	17	5	22		2	4	2	5	3	3				
" liver . . . . .	8	2	1	..	4	5	13	6	19		21	25	21	17	17	17				
" lungs . . . . .	31	36	32	28	49	35	154	57	211		41	25	21	17	17	17				
" peritoneum . . . . .	2	1	..	5	6	5	13	6	19		2	2	3	1	4	3				
" pleura . . . . .	2	..	1	2	2	2	2	7	9		1	1	..	1	2	1				
" stomach & bowels . . . . .	12	10	10	6	12	10	34	26	60		10	9	18	9	8	14				
" uterus . . . . .	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
Intussusception . . . . .	..	..	..	..	2	..	1	1	2		..	..	..	..	..	..	..	..	..	..
Jaundice . . . . .	1	2	..	..	2	3	3	5	8		2	1	1	..	1	..	..	..	..	..
Mania . . . . .	..	..	..	..	1	..	..	1	..		..	..	..	..	..	..	..	..	..	..
Mania à potu . . . . .	7	1	4	2	8	1	23	..	23		..	4	1	9	4	5	..	..	..	..
Marasmus . . . . .	8	9	8	11	25	11	11	61	72		12	7	17	10	23	18				
Measles . . . . .	3	2	4	..	6	5	..	20	20		3	3	5	7	2	..				
Mortification . . . . .	2	1	..	..	1	2	..	2	4		..	..	2	1	..	..				
Old age . . . . .	9	9	8	13	11	17	67	..	67		8	8	10	20	9	18				
Neuralgia . . . . .	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..				
Palsy . . . . .	4	7	6	6	8	3	34	..	34		4	5	8	3	6	..				
Parpura . . . . .	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..				
Pyæmia . . . . .	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..				
Rheumatism . . . . .	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..				
Scrofula . . . . .	1	2	1	3	1	2	2	2	8		2	3	4	3	2	6				
Smallpox . . . . .	..	..	1	..	..	..	..	..	1		..	..	..	..	..	..				
Sore throat . . . . .	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..				
Stillborn . . . . .	32	24	25	24	33	28	..	166	166		16	16	25	25	30	28				
Syphilis . . . . .	..	..	..	..	..	1	1	1	2		..	..	..	..	..	..				
Tabes mesenterica . . . . .	2	..	1	1	..	1	..	5	5		..	1	1	..	..	..				
Teething . . . . .	1	..	1	1	2	..	..	5	5		2	..	2	..	1	1				
Tetanus . . . . .	..	1	2	1	..	..	2	2	4		..	1	..	..	..	2				
Thrush . . . . .	..	..	..	..	..	1	..	1	1		..	..	..	..	..	..				
Tumours . . . . .	..	..	..	..	..	..	1	1	..		..	..	..	..	..	..				
Ulceration . . . . .	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..				
" of the bowels . . . . .	..	..	..	..	..	1	..	1	..		..	..	..	..	..	..				
" " throat . . . . .	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..				
Unknown . . . . .	6	3	7	2	6	3	18	9	27		7	4	1	3	2	2				
Worms . . . . .	..	..	..	..	..	..	..	..	..		..	..	1	..	..	..				
Totals of the sex . . . . .	401	355	395	374	525	428	1288	1190	2478		404	322	392	343	482	438				

FIRST QUARTER, COMMENCING JANUARY 1, 1859.							SECOND QUARTER, COMMENCING APRIL 2, 1859.						
	Jan.	Feb.	March.	Adults.	Minors.	Totals.		April.	May.	June.	Adults.	Minors.	Totals.
Under 1 year . . .	197	214	260	..	..	671		173	181	298	..	..	652
From 1 to 2 years . . .	64	60	98	..	..	222		56	79	92	..	..	227
“ 2 to 5 “ . . .	55	69	85	..	..	209		78	63	74	..	..	215
“ 5 to 10 “ . . .	25	24	18	..	..	67		30	22	27	..	..	79
“ 10 to 15 “ . . .	8	9	17	..	..	34		15	12	16	..	..	43
“ 15 to 20 “ . . .	18	21	37	..	..	76		22	22	21	..	..	65
“ 20 to 30 “ . . .	83	82	101	..	..	266		81	81	80	..	..	242
“ 30 to 40 “ . . .	83	89	86	..	..	258		86	79	86	..	..	251
“ 40 to 50 “ . . .	64	63	83	..	..	210		56	57	72	..	..	185
“ 50 to 60 “ . . .	49	46	54	..	..	149		47	49	51	..	..	147
“ 60 to 70 “ . . .	41	33	45	..	..	119		43	36	43	..	..	122
“ 70 to 80 “ . . .	37	35	45	..	..	117		22	34	38	..	..	94
“ 80 to 90 “ . . .	30	20	20	..	..	70		13	15	18	..	..	46
“ 90 to 100 “ . . .	1	2	4	..	..	7		4	5	3	..	..	12
“ 100 to 110 “ . . .	1	2	..	..	..	3		..	..	1	..	..	1
Total of monthly mortality	756	769	953	..	..	..		726	735	920	..	..	..
Total males for the quarter	..	..	..	..	..	1321		..	..	..	..	..	1278
“ females “	..	..	..	..	..	1157		..	..	..	..	..	1103
“ adults “	..	..	..	1199	..	..		..	..	..	1100	..	..
“ minors “	..	..	..	..	1279	..		..	..	..	..	1281	..
“ for the quarter . . .	..	..	..	..	..	2478		..	..	..	..	..	2381

for 1859—Continued.

QUARTER, APRIL 2, 1859.			THIRD QUARTER, COMMENCING JULY 2, 1859.												FOURTH QUARTER, COMMENCING OCTOBER 1, 1859.												Total for the year.
Adults.	Minors.	Total.	July.		Aug.		Sept.		Adults.		Minors.		Total.		Oct.		Nov.		Dec.		Adults.		Minors.		Total.		Total for the year.
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
18	8	26	5	4	3	1	3	3	6	13	19	2	2	6	4	11	7	12	20	32	119	119	2	2	119		
4	6	10	2	3	1	1	3	4	7	1	2	1	1	3	5	3	8	3	8	34	34	34	2	2	34		
14	5	19	10	3	5	3	1	23	4	27	3	2	5	6	4	4	20	4	24	92	92	92	2	2	92		
39	99	138	4	5	13	11	12	4	11	38	49	14	7	34	28	36	27	39	107	146	544	544	544	2	2	544	
10	5	15	1	1	1	1	3	6	1	7	1	1	1	1	2	5	8	3	11	11	52	52	52	2	2	52	
5	1	6	1	1	1	1	1	1	2	1	2	1	1	1	1	2	4	2	6	6	23	23	23	2	2	23	
30	38	68	10	10	16	11	9	8	28	36	64	12	10	12	10	11	11	40	25	65	257	257	257	2	2	257	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
2	3	5	1	1	1	1	1	1	3	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
24	..	24	3	1	6	2	3	..	15	..	15	4	1	7	1	5	2	20	..	20	82	82	82	2	2	82	
10	74	84	23	33	39	40	16	15	9	157	166	12	4	7	7	7	7	9	35	44	366	366	366	2	2	366	
..	20	20	1	5	1	2	1	..	10	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
4	1	5	..	..	1	..	..	1	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
70	..	70	3	10	9	8	6	3	39	..	39	5	2	4	11	7	5	34	..	34	210	210	210	2	2	210	
1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
24	2	26	5	3	5	2	2	4	20	1	21	3	3	3	3	3	3	18	1	19	100	100	100	2	2	100	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
3	..	3	..	..	1	..	1	..	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
5	15	20	..	1	3	2	2	1	1	8	9	1	..	4	7	3	1	5	11	16	55	55	55	2	2	55	
..	..	..	..	..	1	..	1	..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	140	140	22	24	29	27	29	27	..	158	158	29	28	38	36	33	30	..	194	194	658	658	658	2	2	658	
..	..	..	..	..	..	1	1	..	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	3	3	6	4	3	5	3	1	1	21	22	..	2	1	..	1	..	..	..	..	..	..	..	..	..	..	
..	6	6	2	3	2	1	1	..	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
1	2	3	1	..	1	..	..	..	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	1	..	1	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
2	..	2	..	..	..	1	..	1	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	1	1	..	1	1	..	1	2	..	4	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	1	1	2	..	2	4	..	3	5	9	5	14	4	2	7	3	4	3	16	7	23	83	83	83	2	2	83
..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
12	7	19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
1161	1220	2381	496	507	563	474	336	272	1025	1623	2648	337	292	428	428	398	352	1062	1172	2235	9742	9742	9742	2	2	9742	

			THIRD QUARTER, COMMENCING JULY 2, 1859.												FOURTH QUARTER, COMMENCING OCTOBER 1, 1859.												
			July.		Aug.		Sept.		Adults.		Minors.		Totals.		Oct.		Nov.		Dec.		Adults.		Minors.		Totals.		
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 1 year	..	..	450	395	188	..	..	..	..	..	1033	..	186	208	219	..	..	..	..	..	..	..	..	..	..	..	613
From 1 to 2 years	..	..	142	102	59	..	..	..	..	..	303	40	68	67	..	..	..	..	..	..	..	..	..	..	..	..	175
..	2	5	54	73	36	..	..	..	..	..	163	55	85	88	..	..	..	..	..	..	..	..	..	..	..	..	228
..	5	10	26	36	21	..	..	..	..	..	83	19	31	15	..	..	..	..	..	..	..	..	..	..	..	..	65
..	10	15	12	9	15	..	..	..	..	..	36	10	9	8	..	..	..	..	..	..	..	..	..	..	..	..	27
..	15	20	16	27	22	..	..	..	..	..	65	18	30	16	..	..	..	..	..	..	..	..	..	..	..	..	64
..	20	30	66	112	57	..	..	..	..	..	235	72	98	75	..	..	..	..	..	..	..	..	..	..	..	..	245
..	30	40	75	76	62	..	..	..	..	..	213	63	94	54	..	..	..	..	..	..	..	..	..	..	..	..	211
..	40	50	40	60	50	..	..	..	..	..	150	49	63	59	..	..	..	..	..	..	..	..	..	..	..	..	171
..	50	60	36	51	32	..	..	..	..	..	119	44	60	57	..	..	..	..	..	..	..	..	..	..	..	..	161
..	60	70	44	44	32	..	..	..	..	..	120	39	52	41	..	..	..	..	..	..	..	..	..	..	..	..	132
..	70	80	19	23	19	..	..	..	..	..	61	18	37	30	..	..	..	..	..	..	..	..	..	..	..	..	85
..	80	90	15	27	13	..	..	..	..	..	55	16	20	20	..	..	..	..	..	..	..	..	..	..	..	..	56
..	90	100	7	2	1	..	..	..	..	..	10	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	2
..	100	110	1	..	1	..	..	..	..	..	2648	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2235
Total males for the quarter	..	..	..	..	..	..	..	..	..	..	1395	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1163
..	females	..	..	..	..	..	..	..	..	..	1253	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1072
..	adults	..	..	..	..	..	..	..	..	..	965	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	minors	..	..	..	..	..	..	..	..	..	1683	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	for the quarter	..																									

TABLE II.—*Mortality from Diseases of the Lungs and Air-passages.*

DISEASES.	ANNUAL AGGREGATES.			QUARTERS OF 1859.			
	1857.	1858.	1859.	1st.	2d.	3d.	4th.
Angina pectoris . . . . .	1	...	...	...	...	...	...
Asphyxia . . . . .	15	87	27	8	8	3	8
Asthma . . . . .	33	12	22	7	5	3	7
Catarrh . . . . .	33	22	...	...	...	...	...
Congestion of the lungs . . . . .	132	78	108	38	22	18	30
Consumption " "	1544	1659	1505	399	379	343	384
Croup . . . . .	256	292	312	92	59	44	117
Disease of the chest . . . . .	7	11	...	...	...	...	...
" lungs . . . . .	53	23	...	...	...	...	...
Dropsy of the chest . . . . .	48	140	159	32	46	42	39
Effusion on the chest . . . . .	3	...	...	...	...	...	...
" lungs . . . . .	4	...	...	...	...	...	...
Emphysema . . . . .	1	...	...	...	...	...	...
Empyema . . . . .	1	...	...	...	...	...	...
Gangrene of the lungs . . . . .	1	...	...	...	...	...	...
Hemorrhage from the lungs . . . . .	18	...	28	9	9	...	10
Influenza . . . . .	9	...	...	...	...	...	...
Inflammation of the bronchi . . . . .	179	100	119	42	26	19	32
" " chest . . . . .	16	1	...	...	...	...	...
" " larynx . . . . .	14	...	34	9	10	7	8
" " lungs . . . . .	504	562	544	211	138	49	146
" " pleura . . . . .	27	2	23	9	6	2	6
" " trachea . . . . .	11	...	...	...	...	...	...
Totals . . . . .	2910	2929	2881	856	708	530	787
Hooping-cough . . . . .	51	153	52	9	11	14	18
Totals . . . . .	2961	3092	2933	865	719	544	805
Total mortality, exclusive of stillborn	10338	10162	9084	—	—	—	—
Per cent. from diseases of the lungs .	28.13	30.43	32.17	—	—	—	—
Per cent. from consumption of the lungs	14.93	16.38	16.56	—	—	—	—

TABLE III.—Deaths from Consumption of the Lungs, during each Month in the year 1859, at fourteen distinct periods of life, with the Sexes designated for each month.

	AGES.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Under 1 year . . . . .	1	...	1	1	1	1	1	1	1	1	1	2	8
From 1 to 2 years . . . . .	...	...	1	1	1	2	2	2	2	3	1	...	6
“ 2 to 5 “ . . . . .	...	...	1	1	3	2	2	1	...	3	1	...	10
“ 5 to 10 “ . . . . .	...	...	2	1	...	2	3	1	2	1	2	1	11
“ 10 to 15 “ . . . . .	...	...	2	2	...	2	3	1	2	1	1	1	15
“ 15 to 20 “ . . . . .	1	7	11	6	8	4	3	15	12	8	20	6	101
“ 20 to 30 “ . . . . .	37	45	51	44	36	39	36	61	26	33	54	33	495
“ 30 to 40 “ . . . . .	39	44	39	39	34	35	30	28	24	32	38	27	409
“ 40 to 50 “ . . . . .	22	18	26	28	13	22	19	16	18	13	12	21	228
“ 50 to 60 “ . . . . .	9	7	14	9	12	9	2	7	7	10	14	16	116
“ 60 to 70 “ . . . . .	4	3	5	9	7	7	10	2	3	7	8	7	72
“ 70 to 80 “ . . . . .	6	1	3	1	2	3	...	1	...	2	3	1	23
“ 80 to 90 “ . . . . .	3	...	1	1	...	1	...	...	...	2	1	1	10
“ 90 to 100 “ . . . . .	...	...	...	...	...	...	1	...	...	...	...	...	1
Male . . . . .	65	68	78	72	66	68	54	70	49	51	74	65	780
Female . . . . .	56	57	75	70	47	56	57	67	46	61	82	51	725
Monthly totals . . . . .	121	125	153	142	113	124	111	187	95	112	156	116	1505
Quarterly totals . . . . .	399		379		343		384						1505

TABLE IV.—Mortality from Diseases of the Nervous System.

DISEASES.	ANNUAL AGGREGATES.			QUARTERS OF 1859.			
	1857.	1858.	1859.	1st.	2d.	3d.	4th.
Apoplexy . . . . .	115	111	92	24	21	16	31
Chorea . . . . .	1	...	...	...	...	...	...
Coma . . . . .	1	...	...	...	...	...	...
Concussion of the brain . . . . .	7	1	...	...	...	...	...
Congestion of the brain . . . . .	201	241	214	54	47	65	48
Convulsions . . . . .	556	609	520	156	125	130	109
Coup de soleil . . . . .	6	26	5	...	1	4	...
Cramp . . . . .	10	...	...	...	...	...	...
Disease of the brain . . . . .	100	134	141	33	43	37	28
Dropsey of the brain . . . . .	173	261	234	57	70	72	35
Effusion of the brain . . . . .	92	72	76	22	15	28	11
Epilepsy . . . . .	18	2	7	...	...	1	6
Inflammation of the brain . . . . .	306	315	330	98	88	91	53
Mania or insanity . . . . .	7	9	4	1	1	...	2
Mania à potu . . . . .	62	85	82	23	24	15	20
Neuralgia . . . . .	...	1	2	...	1	...	1
Palsy . . . . .	92	105	100	34	26	21	19
Softening of the brain . . . . .	14	3	...	...	...	...	...
Teething . . . . .	17	12	22	5	6	9	2
Tetanus . . . . .	11	13	14	4	3	2	5
Trismus . . . . .	2	...	...	...	...	...	...
Totals . . . . .	1791	2000	1843	511	471	491	370
Total mortality, exclusive of stillborn	10338	10162	9084				
Per cent. of total mortality . . . . .	17.38	19.58	20.28				

TABLE V.—*Mortality from Diseases of the Organs of Nutrition.*

DISEASES.	ANNUAL AGGREGATES.			QUARTERS OF 1859.			
	1857.	1858.	1859.	1st.	2d.	3d.	4th.
Abscess . . . . .	35	31	34	13	9	3	9
“ of the liver . . . . .	1	...	1	...	1	...	...
Cancer of the stomach and bowels . . . . .	7	...	39	11	12	9	7
Cholera . . . . .	3	...	...	...	...	...	...
“ infantum . . . . .	534	662	408	...	79	321	8
“ morbus . . . . .	10	53	24	...	6	18	...
Cirrhosis of the liver . . . . .	3	...	...	...	...	...	...
Colic . . . . .	7	...	...	...	...	...	...
Constipation . . . . .	...	1	...	...	...	...	...
Consumption of the bowels . . . . .	5	...	...	...	...	...	...
Diarrhoea . . . . .	119	138	126	19	21	75	11
Disease of the liver . . . . .	41	68	12	2	10	...	...
“ stomach and bowels . . . . .	17	12	...	...	...	...	...
Dropsey . . . . .	239	95	...	...	...	...	...
“ abdominal . . . . .	6	...	...	...	...	...	...
Dysentery . . . . .	198	240	129	12	42	63	12
Dyspepsia . . . . .	2	1	1	...	...	1	...
Gout . . . . .	5	1	3	2	...	1	...
Icterus . . . . .	11	16	23	8	5	4	6
Inflammation of the liver . . . . .	25	30	92	22	19	27	24
“ “ peritoneum . . . . .	56	55	52	19	15	7	11
“ “ stomach and bowels . . . . .	299	273	257	60	68	64	65
Intussusception . . . . .	4	2	8	2	2	...	4
Marasmus . . . . .	506	463	366	72	84	166	44
Obstruction of the bowels . . . . .	2	2	...	...	...	...	...
Scrofula . . . . .	51	54	55	10	20	9	16
Tabes mesenterica . . . . .	44	56	34	5	3	22	4
Ulceration of the stomach and bowels . . . . .	6	...	6	1	5	...	...
Totals . . . . .	2236	2253	1670	258	401	790	221
Total mortality, exclusive of stillborn	10338	10162	9084				
Per cent. of total mortality . . . . .	21.62	22.17	18.38				

TABLE VI.—*Mortality from Diseases of the Urino-Genital Organs.*

DISEASES.	ANNUAL AGGREGATES.			QUARTERS OF 1859.			
	1857.	1858.	1859.	1st.	2d.	3d.	4th.
Albuminuria . . . . .	7	1	...	...	...	...	...
Amenorrhœa . . . . .	...	...	1	...	1	...	...
Cancer of uterus . . . . .	4	...	52	12	7	21	12
Childbed . . . . .	7	1	...	...	...	...	...
Chlorosis . . . . .	1	...	1	1	...	...	...
Convulsions, puerperal . . . . .	1	...	...	...	...	...	...
Diabetes . . . . .	7	3	3	1	...	1	1
Disease of the bladder . . . . .	1	1	...	...	...	...	...
" kidneys . . . . .	8	...	21	5	...	5	11
" ovaries . . . . .	2	...	...	...	...	...	...
" uterus . . . . .	2	...	...	...	...	...	...
Fever, puerperal . . . . .	49	36	51	16	12	13	10
Hemorrhage from uterus . . . . .	5	...	7	3	2	...	2
Inflammation of the bladder . . . . .	9	3	...	...	...	...	...
" kidneys . . . . .	7	7	2	2	...	...	...
" uterus . . . . .	8	...	...	...	...	...	...
Rupture of the urethra . . . . .	1	...	...	...	...	...	...
Strangury . . . . .	...	8	...	...	...	...	...
Suppression of urine . . . . .	3	...	...	...	...	...	...
Syphilis . . . . .	2	3	5	2	...	2	1
Tumour, ovarian . . . . .	1	...	...	...	...	...	...
Ulceration of the uterus . . . . .	1	...	...	...	...	...	...
Totals . . . . .	126	63	143	42	22	42	37
Total mortality, exclusive of stillborn	10338	10162	9084				
Per cent. of total mortality . . . . .	1.21	0.62	1.75				

TABLE VII.—*Mortality from Fevers.*

DISEASES.	ANNUAL AGGREGATES.			QUARTERS OF 1859.			
	1857.	1858.	1859.	1st.	2d.	3d.	4th.
Fever . . . . .	3	...	...	...	...	...	...
" bilious . . . . .	25	43	24	6	12	5	1
" cerebral . . . . .	2	1	...	...	...	...	...
" congestive . . . . .	5	1	...	...	...	...	...
" continued . . . . .	2	...	...	...	...	...	...
" enteric . . . . .	2	...	5	...	...	1	4
" gastric . . . . .	4	...	...	...	...	...	...
" hectic . . . . .	2	...	...	...	...	...	...
" intermittent . . . . .	5	2	5	...	...	1	4
" malignant . . . . .	...	...	...	...	...	...	...
" nervous . . . . .	9	1	...	...	...	...	...
" pernicious . . . . .	...	...	...	...	...	...	...
" puerperal . . . . .	49	36	51	16	12	13	10
" remittent . . . . .	23	17	23	2	1	13	7
" scarlet . . . . .	704	241	232	67	53	28	84
" typhoid . . . . .	175	197	264	74	68	67	55
" typhus . . . . .	38	71	47	14	14	12	7
" " icterodes . . . . .	...	16	...	...	...	...	...
" yellow . . . . .	...	...	...	...	...	...	...
Totals . . . . .	1048	626	651	179	160	140	172
Total mortality, exclusive of stillborn	10338	10162	9084				
Per cent. of total mortality . . . . .	10.13	6.16	7.16				

TABLE VIII.—Deaths, showing the Sexes, for each Month in the Year, and the Number at Fifteen Distinct Periods of Life, with the Percentages at each Period to the Total Mortality, Exclusive of Stillborn—also the number of Stillborn Children for each Month, and their Sexes.

Table I. The mortality of our city for 1859, as found in this table, which is in accordance with the record furnished at the health office, has amounted to 9,742. This number of deaths is 955, or nearly 9 per cent. less than those for 1858, and 12.19 per cent. less than the average of deaths for the past four years.

Should the population of Philadelphia reach the estimate recently ascribed to it in our daily journals, of 650,000—which is a liberal calculation—the mortality gives but one death in every 66.72 of the population, or 14.98 deaths to every 1,000 living. Not willing, however, to be adjudged as introducing an exaggerated statement into my report, I prefer to fix the standard at what I conceive to be a more reliable calculation, and base the estimates upon a population of 625,000. From this assessment, it will be found that the deaths amounted to only 1.55 per cent.—or equal to 1 in every 64.15—or as 15.58 in each 1,000 of the population.

This death rate of 15 in each 1,000 of the population, is less by 2 in 1,000, than the standard affixed to the death rate of about a million of people residing in sixty-four districts selected from various parts of England, and who were living under the least unfavourable sanitary condition. It will be remembered, also, that the death rate in large cities is affixed at a much higher point than in rural districts. In London, it is 25 in every 1,000. In New York city in 1859, estimating the population at 800,000, the death rate was 27 in 1,000.

A comparison of the rate of mortality to population of our own with several other cities, will show still more clearly the striking difference in the death rate pressure upon populations in different places.

	Population.	Mortality.	Ratio of deaths to pop.	Deaths to each 1,000.	Per cent. of deaths to pop.
Providence .	52,000	982	1 in 52.09	19	1.83
Boston .	180,000	3,738	1 in 48.15	21	2.07
New York .	800,000	21,645	1 in 36.09	27	2.70
Philadelphia	625,000	9,742	1 in 64.15	15	1.55
Baltimore .	253,000	5,039	1 in 50.02	20	2.

These figures are from official records, and may be relied upon. Consulting the several death rolls, we will have an approximation, at least, towards a comparison of the healthiness of the cities named. The most glaring inequality will be found to exist between the death rate to population of our own city, and that of our sister city New York. Notwithstanding this marked disparity of the low rate of 1 in 64.15 in this city, and the high rate of 1 in 36.09 in New York; the city inspector of the latter city holds the following language in his annual report—"New York city at this day can lay claim to the privilege of being numbered with those of the most healthy in the world." It is unnecessary to comment upon this extraordinary statement, when the above figures contradict so positively the assertion; still, it is to be regretted that the inspector had not availed himself of the above statistical information, which would have obliged him to have presented a widely different statement, although one indicating a more

severe pressure of sanitary evils upon the health of their population, than his report develops.

Providence, R. I., has of late been characterized as one of the best regulated cities in the country, in a sanitary point of view. My knowledge of the accurate manner in which the city registrar, Dr. Snow, performs the duties of his office, especially in that department which relates to the hygienic defences of life, confirms this opinion. Nevertheless, in comparing the figures in the above table, I find that the death rate in our own city is as 1 in 12 less than in Providence, and 4 deaths fewer in every 1,000 living; while the percentage of deaths to population is  $\frac{28}{100}$  less. In each of the other cities named, in the above table, the difference is still greater in favour of the health of Philadelphia.

The returns, therefore, of deaths for 1859, present a very high standard of salubrity for our city, equal to, if not surpassing, that of the most healthy city in the world.

Nor should I be surprised, if the correctness of our returns made to the health office of the mortality of the city be questioned by sanitarians abroad. In order to meet this distrust, I have instituted a rigid scrutiny into the manner by which the weekly returns of deaths are made at the health office, and the sources from whence they are received, but am unable to discover any defect upon which I could build a reasonable doubt that they do not comprehend all the interments that are made during the year.

The unusual health of our city during the year, has been the subject of frequent discussion among the fellows of this College, as well as by the papers of the day; and I feel assured that every practising physician is competent to furnish a commentary, illustrative of the fact that there has prevailed an unusual scarcity of cases of disease.

No epidemic has visited us, nor have our usual endemics prevailed to any extent. In many instances the diseases of the different seasons have been less frequent and more mild in their character.

During the fall and winter months and in the early spring, croup, and inflammation of the bronchia and lungs among children were the prevailing diseases. With croup, there was observed the steady increase in the number of fatal cases which I have alluded to in several former reports. In inflammation of the lungs, the deaths did not reach the number recorded for 1858. There was nothing, however, unusual in any of the winter diseases, beyond their general characteristics. Scarlet fever, which had prevailed to a great extent for several previous years, was still among us when the year opened. For the most part, the cases which occurred did not present a highly malignant type of fever, and yielded readily to a mild treatment. The deaths, however, were nearly equal to those of the previous year, and amounted to 232.

I cannot omit to mention in this place the appearance of a few cases of diphtheria, or malignant or putrid sore throat. Towards the latter end of the year these cases increased in number; several of them were fatal, but

whether they were certified to and classed in the record with sore throat, scarlet fever, or croup, I am unable to determine, as I find no death recorded from diphtheria. I did not witness a single malignant case of this fatal disease in my own practice, but in a number of cases of sore throat, accompanied with high fever, vomiting, frequent pulse and red tongue, which came under my care, I observed a remarkable tendency to congestion of the mucous tissue of the fauces of a dark livid hue, to the exudation of a whitish plastic lymph and minute points of ulceration. These cases were accompanied with great debility of the system. They were evidently characteristic of the epidemic of diphtheria, but in a mild form, as none proved fatal.

None of these cases were in any manner involved with scarlet fever, and in one instance the patient had passed through that disease a few months previously thereto. Nor did any of them resemble croup.

How nearly this malignant form of disease which has prevailed in several of our large cities and towns, to an extent sufficient to create alarm, is identified with scarlet fever, or with membranous croup, or whether it derives its origin from a distinct and peculiar poison, becomes an important question for solution. The indications are, that ere long we may have to combat this formidable enemy, which, as yet, particularly in its malignant type, has resisted, in a majority of instances, the most watchful and judicious treatment.

The invasion of cholera infantum took place about the usual period of the summer, and was most prevalent in July. Its ravages by death, however, were not so great by 254, as during the previous year. The number of deaths recorded were 408, a less mortality, compared to population or deaths from all diseases, than has occurred for many years. The cause of this remarkable diminution in the deaths from this infantile endemic may be ascribed, in part, to the favourable condition of the summer heat, which was 2 degrees below the average for the previous eight years, to the absence of a choleraic influence, and the increased facilities for hygienic protection afforded that class of the population who are deprived of the advantage of a pure atmosphere in their unventilated houses. They are now enabled by cheap rides, in easy and commodious city railroad cars, in almost every direction, to reach within a few minutes the rural environs of our city, where, with their feeble, sickly and emaciated offspring, they can enjoy the luxury of inhaling the pure, cool and invigorating air of the country.

Of the entire number of deaths for the year, 5,157 were males, and 4,585 were females. This proportion shows an excess of deaths in the males of 12.52 per cent., and is in keeping with the records of our mortality of sexes for a number of years past.

Stillborn children foot up 658 during the year. These, with the deaths from casualties of various kinds, and from debility and old age, amounting in all to 1,709, should be deducted from the total mortality, in order to ascertain more correctly the deaths from morbid causes. By this arrange-

ment I find that only 8,033 deaths, or one in every 76.5 of the population, were caused by the effect of diseases, thus presenting our sanitary position in a still more favourable light.

Of all the deaths, including stillborn, 2,969 perished before the expiration of the first year of life. Between the ages of one and two, 927 died; between two and five, 815; between five and ten years, 294. It will be seen, therefore, that 5,005, or 51.37 per cent., more than half of the annual mortality, occurred before the tenth year of life. This large proportion of infant mortality in our city, presents a melancholy picture of the continued prevalence of every variety of sanitary evils, not exempting swill milk. These, together with the mismanagement of children on the part of parents and others, who have the oversight of this interesting portion of our population, are the prominent causes for the fatality among them. In several former reports, I have called the attention of the fellows of the College to this single item of our annual mortality. I would again impress upon them the importance, nay the sacred duty, not only of arousing the public conservators of health to the necessity for the institution of a sanitary medical police, but the enforcement of ordinances drafted in accordance with the laws of health and life. Nor is it of less importance, through a special committee, to make such inquiries and investigations, as will lead to a knowledge of the true causes of the alarming waste of infantile life. This course of action may lead to measures of sanitary reform, that will prove influential not only in removing the various preventable causes of disease that exist in our midst, but in diminishing the fearfully increasing amount of infant mortality.

The deaths under twenty years were 5,415, while those above that age were 4,327. This division gives 55.58 per cent. of the mortality to children, or those under twenty, that period constituting the division line between adults and children. In 1858, the deaths in New York city, of those under twenty, were 67.70 per cent. of the whole number, an excess of 14.32 per cent. over those of our own city for the same year and the like period.

The highest number of deaths recorded in any one decennial period, beyond those in the first ten years of life, will be found between twenty and thirty years, amounting to 988. From this period, the deaths gradually decreased, in each succeeding decade, up to between eighty and ninety, when they were 227. Beyond that age, the number of deaths reached but 37, and of these, only six were centennarians.

The greatest mortality in any month was in August, viz., 1,037; while the least, 608, was in the following month of September. July, however, presented the highest rate of mortality among children, or those under 20 years, to wit, 700.

I have prepared the following table to illustrate, at a glance, the diseases which have been so fruitful during the year in swelling the amount of mortality among children, together with the number of deaths from each source, and the monthly periods when they proved most fatal.

## *Mortality among Children.*

DISEASES.	Annually total.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	HIGHEST MONTH.	LOWEST MONTHS.	
															January and April.	Jan., Feb., Mar., and Dec.
Congestion of the brain . . . . .	131	6	9	13	6	7	14	19	18	8	10	11	10	July	January and April.	Jan., Feb., Mar., and Dec.
Cholera infantum . . . . .	408	...	...	...	6	10	63	194	104	23	7	1	...	July	Jan., Feb., Mar., and Dec.	January and April.
Convulsions . . . . .	488	37	57	51	27	42	52	43	52	26	25	46	30	February	October	January and April.
Croup . . . . .	311	34	28	30	27	21	10	16	16	12	28	53	36	November	June	Jan., Feb., Mar., and Dec.
Debility . . . . .	253	24	16	30	15	18	27	33	31	14	16	10	19	July	November	January and April.
Dropsy of the brain . . . . .	230	16	20	19	20	21	29	35	25	12	10	10	13	July	October and November.	Jan., Feb., Mar., and Dec.
Fever, scarlet . . . . .	232	11	28	28	15	13	25	8	15	5	16	29	39	December	September.	January and April.
Malaria . . . . .	328	13	16	32	15	26	33	53	75	30	13	13	9	August	December.	Jan., Feb., Mar., and Dec.
Inflammation of the brain . . . . .	275	28	22	32	29	16	29	27	28	25	12	16	11	March	December.	January and April.
" " lungs . . . . .	898	48	45	61	45	32	22	9	18	11	17	39	51	March	July.	January and April.
Total . . . . .	3054	217	241	296	205	206	304	437	382	166	154	228	218	April.	April.	January and April.
Stillborn . . . . .	658	56	49	61	32	50	58	46	56	56	57	74	63	November	April.	January and April.
	3712	273	290	357	287	256	362	483	438	222	211	302	281			

This table furnishes an account of 3,054 deaths. Of these, 2,396 are charged to only ten diseases, and 658 are recorded stillborn. Convulsions maintains its ascendancy over all other diseases of infancy, in producing death. It numbers 488, and exceeds cholera infantum by 80. The seasons of the year appear to exert very little influence upon the deaths from convulsions, as there is a striking uniformity in the numbers for each month. Not so, however, with cholera infantum and croup. In the former, there is a great disparity, as during the three winter, and the first spring months, there was not a single death recorded; while in the month of June there were 63; in July, 194; in August, 104 deaths. Croup was most fatal in November, when there were 53 deaths, and least fatal in June, when there were only 10 deaths. The winter months also proved more fatal than the spring or summer.

Marasmus was the cause of 328 deaths inserted in this table. The summer months exhibit a large increase over all others. The highest rate was in August, 75, and the lowest in December, 9.

Inflammation of the lungs, which stands quite prominent, furnished 398 deaths, and was most fatal during the winter and spring months.

The stillborn, numbering 658, which I have added to this table, and are equal to about 7 per cent. of all the deaths, present less than the usual uniformity of numbers for each month. The highest rate of these deaths was in November, viz., 74, and the lowest 32, in April. The months of January, June, August, September, and October, however, varied only between 56 and 58 in each month.

Table II. The deaths from diseases of the lungs and air-passages are given in this group, and amount to 2,933, or 32.17 per cent. of all the deaths for the year, exclusive of stillborn. This percentage shows higher than in 1858, when it was only 30.43 per cent., for the reason that the annual aggregate mortality is less than in 1858.

The most striking feature in this table is the falling off of the deaths from hooping-cough, as compared with the previous year, when they rated 153. This year, they were only 52, a decrease of 101, equal to 66 per cent.

Croup, which I have already alluded to, is still on the increase. The first and last quarters of the year, which include the winter months, present the highest mortality.

Asthma, congestion of the lungs, dropsy of the chest, inflammation of the bronchia and pleura, show a small increase of deaths over the previous year, whereas, the deaths from consumption of the lungs, and inflammation of the lungs, have declined.

Table III. contains a statistical enumeration of the deaths from consumption of the lungs, amounting to 1,505. It furnishes also the periods

of the year, and the time of life, when the disease has proved most fatal, together with a designation of the sexes, and the monthly and quarterly mortality.

The deaths from consumption this year are 9 per cent. less than they were in 1858. Another change will be discovered, in regard to the proportion of sexes; as, contrary to the usual rate, the excess in this instance is on the side of males, equal to 7.57 per cent. above those in females.

This disease is productive of a large amount of our annual mortality. The fatal cases are equal to 61 per cent. of all the deaths from the diseases of the lungs and air-passages; and of the annual aggregate mortality, they form nearly 19 per cent. To the population, they are as 1 to every 415.29, or 2.40 in every 1,000.

The heaviest mortality was between the ages of 20 and 30, while the month of November records the greatest number of deaths, viz., 156. The fewest deaths, 95, occurred in September. The first quarter of the year contributed the largest number of deaths.

Table IV. records the deaths from diseases appertaining to the nervous system, amounting to 1,843, or 20.28 per cent. of the entire mortality.

The highest mortality from any one disease in this table is claimed by convulsions, which amounts to 520, or 28.22 per cent. of all the deaths in this group.

The diseases coming under this head not being influenced by the seasons to the same extent as many of those are in other classes, the uniformity in the number of deaths occurring from month to month, and even from year to year, is but little affected, unless it may be in the instance of coup de soleil, which is an exception. An examination of the record of deaths for several years back, will present only a slight disparity in the numbers for the different quarters of each year.

Table V. The diseases belonging to this class, the organs of nutrition, return a mortality of only 1,670, or 18.38 per cent. of the annual deaths. The falling off of the deaths in this group from those of last year, is equal to about 4 per cent. The disproportion is caused principally by the less number of deaths from cholera infantum, dysentery, and marasmus. These three diseases alone make a difference of 462 deaths in the table, when compared with those of the previous year. The diminished number of deaths from cholera infantum, which has always rated next highest to consumption in these tables, is strikingly perceptible, to which circumstance I have already alluded.

The diseases noticed in this table are chiefly those which happen during the warm seasons of the year; hence it will be found that the 2d and 3d quarters furnish the largest proportion of deaths, equal to 148.62 per cent. over the 1st and 4th quarters.

The large increase of deaths from inflammation of the liver, is worthy of notice. The average of deaths from this disease for the three previous years was  $31\frac{1}{3}$ ; this year, 1859, they were 92, nearly equal to the number for the three former years. I am not prepared to assign any cause for this increase.

Table VI: Those who examine this table of deaths from diseases of the urino-genital organs, will be struck with the comparative increase over those of the previous year. The number in 1858 was 63. In 1859, they are set down at 143, a difference of eighty. A little explanation will place this disparity in its true light. In 1858, all the deaths from cancer of the different organs were placed in the health office reports under one general head, cancer; hence the deaths from cancer of the uterus were not found in this table. This year the deaths from cancer having been distinguished according to their location, increases this table 52. The only real increase, therefore, over the deaths of 1858, is to be found in puerperal fever and disease of the kidneys, amounting to 36.

There has been a perceptible increase of deaths from puerperal fever. They now number 51, or fifteen over those for 1858. The highest number for any period occurred in the first quarter, the coldest season of the year. The proportion of deaths in this table to the entire mortality, was 1.75 per cent.

Table VII. Like the mortality from fevers during 1858, so this table, the present year, exemplifies the healthy condition of our city, when placed in contrast with those of former years, and with the deaths from fevers, in other large cities. The proportion, to the mortality from all causes, exclusive of stillborn, is 1 in every 13, or 7.16 per cent. It rates about alike with that of the former year. The slight increase of percentage is owing to decrease in the general mortality for the year.

The deaths from scarlet fever in this table give nearly the like number as in 1858, viz. 232. The epidemic influence still lingers with us, and according to the returns for the last quarter, may be on the increase.

I have omitted the table for measles, smallpox, and varioloid. The deaths from measles amounted to 51. Of these, 40 occurred in the two first quarters of the year, ten in the third, and only one in the fourth quarter. By this, it would appear that our city at this time is almost free from measles.

Of deaths from smallpox, but two are found during the entire year, and none from varioloid.

I cannot refrain from expressing the conviction, judging from the evidence afforded by the statistics of former years, that ere long our city may suffer from an epidemic influence, which shall inflict upon us that most loathsome of all diseases—smallpox. Adopting this opinion, I regret to

add that we are by no means in a proper state of protection, so far as relates to prophylactic measures, to contend with this dangerous enemy to life, from the fact that, for several years, public vaccination has been fearfully neglected, through the supineness of our public authorities, in declining to appoint collectors of cases for vaccination, as in former years. As a consequence of this omission, only 195 persons were vaccinated under this ordinance during the year. No censure whatever can be laid upon the medical gentlemen appointed by Councils as vaccine physicians. Their duty is to vaccinate, gratuitously, all persons who call upon them at their offices, which duty they have faithfully performed. The imperfection exists in the want of collectors of cases, who shall make house to house visits in the several wards, and gather the names and residences of the hundreds of children, and even adults, who are unprotected by vaccination, and who, in the event of an epidemic of smallpox, will fall victims to its ravages. For the past six years, but few of those for whom this humane ordinance is intended, have undergone the process of protection, when compared with the many who received its benefit in previous years, under the ordinance recognizing collectors of vaccine cases. On more than one occasion, the Board of Health has called the attention of Councils to the importance of an improved system of vaccination, but without any favourable response. The medical profession has spoken its mind freely on this subject, and in the event of an epidemic of smallpox visiting our city in its present unprotected state—so far as public vaccination is concerned—let the censure fall where it properly belongs.

Table VIII. furnishes an analytical view of the mortality for the year, arranged in numerical order. The number of stillborn, with the sexes, for each month. The monthly deaths, with the sexes, at fifteen different periods of life. The number of boys and girls, or those under 20, that have died, are all enumerated. A calculation of percentages of deaths for each month to the whole number of deaths is given, together with the percentages for the several designated periods of life. This table will be found useful in the preparation of comparative tables.

*Births.*—For several years previous to the organization of the present board of health, no systematic effort had been made to secure a record of the births in our city. Owing to this delinquency, the reports sent to the health office were so limited in number, as to render their publication useless. This circumstance is to be regretted, as it leaves a blank in the birth statistics of our city, which can never be filled otherwise than by inference.

The following table gives the number of births in our city for 1859, as far as they have been returned at the health office.

1859.	Males.	Females.	Total.
January . . . . .	684	633	1317
February . . . . .	597	577	1174
March . . . . .	621	563	1184
April . . . . .	613	511	1124
May . . . . .	632	575	1207
June . . . . .	551	575	1126
July . . . . .	635	589	1224
August . . . . .	644	605	1249
September . . . . .	686	580	1266
October . . . . .	655	623	1278
November . . . . .	639	622	1261
December . . . . .	712	710	1422
Total . . . . .	7669	7163	14,832

An examination of the above figures, shows an aggregate of 14,832 births. A majority of these are males, amounting to 7669 or 51.70 per cent. of the whole number, while the females numbered 7163 or 48.29 per cent., showing a preponderance of male births for the year, equivalent to 3.41 per cent. This excess of boy births, in the proportion of the sexes, according to the experience of Villermè, Emerson, and other statisticians, indicates a favourable condition of the health, prosperity and vigor of a community. Hence it furnishes additional evidence of the good health of our city for the year.

The births are stated in this table for each month of the year. December appears to have been the most fruitful in births, yielding 1422; April the least so, furnishing only 1124; June gave only 1126. These returns demonstrate that March was the most prolific in conceptions, while August exhibited the least fecundity.

The ratio of births to population, according to these returns, gives 1 to every 42.13. In the city of Boston for 1858 it was, 1 to every 30.35. In the city of Providence for the same year, 1 to every 29.15.

From these comparative estimates, the inference is drawn, that our returns of births are not sufficiently accurate to warrant any reliable statement, as to the proportion of births to population. For no reason can be adduced why the producing part of our community should not be equal to that of England, where, according to the reports of the Registrar-General, there is 1 to every 31 of the population. Moreover, as it is undoubtedly true, that large cities furnish a still greater proportion than States or countries at large; therefore, based upon this evidence, our birth returns should amount to about 20,000.

When compared with the deaths, the returns of births present an excess of 4913; a gain to the population, equal to 50 per cent. of the mortality.